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RENEWABLE ENERGY PROGRAMS FOR MUNICIPALITIES

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ISSUE

What programs are available to municipalities considering installing solar panels on town property?

SUMMARY

There are a number of options available to encourage municipalities considering installing solar panels on town property. These include

1. energy performance contracts, through which a contractor oversees the project and guarantees that its savings will be enough to cover the project's financing costs;

2. the Clean Energy Communities program that provides financial incentives for municipalities that meet certain clean energy goals;

3. requirements for the electric distribution companies (EDCs; i.e., Eversource and United Illuminating) to buy the Zero- and Low-emission renewable energy credits (ZRECs and LRECs) produced by certain customers that install renewable energy facilities; and

4. net metering and virtual net metering programs that allow the owners of certain renewable energy systems to receive electric billing credits for the excess power their systems produce.

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ENERGY PERFORMANCE CONTRACTING

In an energy performance contract, a contractor typically provides all of the services needed to design and implement an energy efficiency project. These can include energy audits, design engineering, construction management, commissioning (verifying that the project works the way it was designed), operations and maintenance, and savings monitoring and verification. The efficiency measures can address: lighting; heating, ventilation, and air conditioning; energy management systems; and building envelope improvements such as insulation, new roofs, and windows. A contract may also include installation of on-site renewable energy or other forms of distributed generation and water conservation measures.

The contractor often arranges for long-term project financing from a third-party. Among the major finance companies participating in such contracts are Bank of America, Citibank, and GE Capital. Financing commonly takes the form of an operating lease or municipal lease. The latter, also called a tax-exempt lease purchase agreement, allows the customer to finance a project without carrying a liability on its balance sheet. Municipal and state governments sometimes finance projects by issuing bonds.

The contractor normally guarantees that the project's savings will be enough to cover the cost of project financing for the life of the project, with the guarantee often backed by a performance bond or letter of credit. If the savings do not take place, the contractor pays the difference. It also bears the risk of interest rate changes and utility cost increases beyond the escalation clause in the contract.

OLR Report 2011-R-0067 describes the performance contracting experience of the Bridgeport Housing Authority, the town of East Hartford, and the borough of Naugatuck. Each municipality contracted with a provider for a variety of energy efficiency improvements. In all three cases, the improvements substantially reduced energy consumption and saved the municipality money. In addition, the efficiency measures reduced emissions of carbon dioxide, sulfur dioxide, and nitrogen oxides. Other municipalities that have entered into performance contracts include Branford, Bristol, Cromwell, Fairfield, Farmington, Mansfield, and Windham. According to Connecticut Conference of Municipalities staff, while most Connecticut municipalities that have entered into performance contracts have had positive experiences, this has not been universally true. OLR Report 2012-R-0178 describes performance contracting in more detail.

Energy-Savings Performance Contracting (ESPC)

Municipalities interested in performance contracting can find a contractor on their own or work through the state-administered ESPC program, which provides a standardized process, pre-approved contractors, and technical assistance.

ESPC allows municipalities to implement energy efficiency and renewable energy measures that are guaranteed to save enough money to finance themselves, using pre-qualified contractors. A solar system may be eligible as part of a larger package of energy projects. Municipalities using ESPC must, among other things, (1) contact the Department of Energy and Environmental Protection (DEEP), (2) collect energy data and benchmark building energy use, (3) identify poorly performing buildings, (4) build support within the community for the ESPC process, and (5) use the contract documents provided by the program to request proposals and select from a list of qualified service providers.

Before beginning the project, municipalities must (1) secure financing for an energy audit (typically included in the cost of the ESPC), (2) use technical service providers funded by the Connecticut Energy Efficiency Fund, and (3) sign a project finance agreement and ESPC contract. More information can be located here http://www.ct.gov/deep/cwp/view.asp?a=4405&Q=513642 and here http://www.energizect.com/your-town/solutions-list/performance-contracting.

CLEAN ENERGY COMMUNITIES

Clean Energy Communities is a three-step program in which a community must (1) commit to the Clean Energy Communities pledge, (2) fulfill the pledge by taking certain actions to increase energy efficiency in municipal buildings and voluntarily support renewable energy, and (3) earn energy efficiency and renewable energy points to qualify for grants and free renewable energy systems. The pledge is non-binding; however its target goals must be met for a town to receive program grants. Complete details about the program can be found at http://www.energizect.com/communities/programs/clean-energy-communities.

Pledge Fulfillment

In the pledge, which must be signed by a town's mayor, first selectman, or town manager, the town promises to:

1. reduce its municipal building energy consumption by 8% in FY 2014, 11% in FY 15, 14% in FY 16, 17% in FY 17, and 20% in 2018;

2. purchase at least 16% of its municipal building electricity from clean, renewable energy sources in FY 14, and increase the purchases by 1% annually to reach 20% in FY 18; and

3. promote energy efficiency and clean, renewable energy technologies in its community.

To fulfill the energy consumption portion of the pledge, a town must benchmark its municipal building energy use with the U.S. EPA's Portfolio Manager benchmarking tool, create a Municipal Action Plan to describe the town's plans to save energy, and meet certain documentation requirements. The town can meet its obligation to purchase renewable energy through a variety of actions that include:

1. installing a clean energy system at a municipal facility,

2. taking certain substitute actions that can reduce the amount of renewable energy that must be purchased, or

3. purchasing certain renewable energy certificates (RECs) (RECs are created for generating power from renewable energy. They can be sold separately from the power produced and are bought and sold on the regional wholesale electric market as one way of complying with certain renewable energy requirements in Connecticut and other states).

Grants and Awards

Once a town is designated a Clean Energy Community, it can earn "energy efficiency points" toward Bright Ideas Grants and "renewable energy points" toward free clean energy systems. Towns that earn 100 energy efficiency points win grants ranging from $5,000 to $15,000 that can be used for energy saving projects. Towns that earn 100 renewable energy points receive a 1 kilowatt(kW) clean energy system.

The Clean Energy Communities program also offers bonus awards such as (1) 3 kW solar panel installation for towns that receive the Clean Energy Leadership award, and (2) a 1 kW solar panel installation for towns recognized as a Green Power Community by the U.S. EPA.

ZRECS & LRECS

CGS § 16-244r et seq. requires electric companies to enter into long-term (15 year) contracts with customers that install new qualifying renewable energy projects, under which the companies buy RECs the projects create. There are separate programs for zero- and low-emission projects (ZREC and LREC respectively). The production of a megawatt hour of electricity from an eligible renewable energy source placed in service on or after July 1, 2011 creates one REC under both programs.

Projects must be on the customer side of the meter, i.e., on the customer's premises. A person cannot apply to participate in both the ZREC and LREC programs for the same project. Further information is available at http://www.ct.gov/deep/cwp/view.asp?a=4120&Q=503720 and https://www.eversource.com/Content/ct-c/business/save-money-energy/renewable-energy-credits/resources-administration.

ZREC Program

To be eligible for the ZREC program, the project must use a zero-emission technology such as solar or wind power and have a generation capacity of 1,000 kilowatts (one megawatt) or less. The companies must conduct separate procurement processes for (1) systems up to 100 kilowatts (a typical residential system is 5 to 10 kilowatts), (2) systems greater than 100 and less than 250 kilowatts, and (3) systems between 250 and 1,000 kilowatts.

The companies' solicitation plans and contracts must by approved by the Public Utilities Regulatory Authority (PURA); PURA must give preference to competitive bidding for resources above 100 kilowatts, with bids ranked in order of their required REC price. There will be up to six award cycles, with an initial price cap of $350 per REC. Systems up to 100 kilowatts are eligible to receive a REC price equal to the weighted average accepted bid price in the most recent solicitation for systems of between 100 and 250 kilowatts, plus an additional 10%.

LREC Program

The law establishes a similar program for low-emission generation technologies. These are generation projects that are less than 2 megawatts in size and use renewable technologies that have emissions of no more than (1) 0.07 pounds per megawatt-hour of nitrogen oxides, (2) 0.10 pounds per megawatt-hour of carbon monoxide, (3) 0.02 pounds per megawatt-hour of volatile organic compounds, and (4) one grain of particulate matter per one hundred standard cubic feet. The initial price cap is $200 per REC.

NET METERING/VIRTUAL NET METERING

In general, the net metering law allows a customer with an on-site electricity generator powered by a renewable energy resource to earn billing credits when the customer generates more power than he or she uses, essentially "running the meter backwards." Thus, if in a given month, a customer supplies more electricity to the grid than its electric company or supplier delivers to the customer, the company or supplier must credit the customer for the excess on the bill for the next month. The electric company or supplier must reduce the customer's bill for the excess electricity at a rate of one kilowatt-hour (kwh) for each kwh produced. The electric company or supplier must carry over the credits earned from month to month and the credits accumulate until the end of the year. At the end of each year, the electric company or supplier must compensate the customer for any excess kwh generated at the avoided cost of wholesale power. A customer who generates electricity from a generating unit with a capacity of more than 10 kilowatts must pay the systems benefits charge and competitive transition assessment based on the customer's total consumption without netting any electricity he or she produces. Residential renewable systems are typically 10 kilowatts or less in size.

"Virtual net metering" allows certain municipal, state agency, and agricultural customers to transfer billing credits to "beneficial accounts" the customer designates. By law, virtual net metering is open to (1) municipalities and state agencies with class I (e.g., solar or wind) or class III (cogeneration) energy systems and (2) agricultural customers with class I energy systems. In either case, the system must be served by an EDC and cannot have a generating capacity over three megawatts. An agricultural customer must own the system on land he or she owns or controls. Municipal and state agency customers can alternatively lease or enter into a long-term contract for the system and there are no restrictions on its location. As with traditional net metering, the electric company must connect the system to the grid and provide metering equipment.

Energy produced by the host is first used to reduce the host's electricity consumption. Surplus production is then assigned "virtually" to reduce the electric bills of the host's beneficial accounts. The EDC must assign a virtual net metering credit to the host's beneficial accounts for the month after the host generates the excess power. Unlike traditional net metering, the credit is less than the full retail rate. Specifically, the credit is calculated as the generation service component (the wholesale cost of power) plus a decreasing portion of the beneficial accounts' transmission and distribution charges. The credit is for 80% of transmission and

distribution charges during a facility's first year operating, 60% during its second year, and 40% for every year after.

The law also caps total virtual net metering credits at $10 million per year, divided between the EDCs in proportion to their respective consumers' electrical load ($8 million for Eversource and $2 million for UI). Within that total, each eligible customer type (municipal, state agency, and agricultural) is further limited to 40% of the allowed credits.

Due to the caps, no new municipal projects are currently being accepted for virtual net metering. However, the legislature may consider revising the municipal caps or the entire virtual net metering program in the future.

For more information on net and virtual net metering, see OLR Reports 2013-R-0390 and 2015-R-0296.

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